AGILE CONTROL OF MILITARY OPERATIONS,

SOL BAA 99-18, DUE: 12 Noon on 18 May 1999; POC: Technical - Col. Daniel McCorry, DARPA/ISO; Contractual – Ms. Algeria Tate, DARPA/CMD; E-MAIL: baa99-18@darpa.mil WEB: http://www.darpa.mil/iso/jfacc/index.htm

OBJECTIVE: The Joint Force Air Component Commander (JFACC) Project in the Information Systems Office (ISO) of the Defense Advanced Research Projects Agency (DARPA) is soliciting proposals (technical and cost) from qualified corporations, research centers, and universities in the area of "Agile Control of Military Operations" under BAA 99-18.

The JFACC Project aims to catalyze a revolutionary change in military command and control (C^2) of the future by tackling one of its toughest problems - the agile and stable control of distributed and dynamic military operations conducted in an uncertain and rapidly changing environment. During the previous phases of this project, significant progress was made in many of the underlying planning technologies required for efficient and effective C^2. However, recognizing that as planning and decision cycle times are driven toward very short timelines, especially in the military air domain, agile and stable control of planned operations has become the critical challenge. Over the next few years, the JFACC Project is structured into two phases with different technical objectives: a Design Phase and a Prototype Phase. The Design Phase will last 18 months and this BAA will be used to acquire the majority of the effort during this phase. The major output of the Design Phase is a preliminary C^2 system design that incorporates the work from previous phases (Planning Techniques and Tools) and the theoretical and technical insights gained during this phase. A critical milestone for the Design Phase will be the summer of 2000 when a draft of the preliminary system design will be produced by the System Architect (already on contract and not a part of this BAA). This draft design will be the basis for the Prototype Phase solicitation and will rely heavily on the early work accomplished during this Design Phase. The Prototype Phase will begin in 2001 and last approximately 2 years. During the Prototype Phase, selected prototype software components will be developed to experimentally prove the technical and operational feasibility of the newly developed C^2 system design. A separate BAA will be issued in the latter part of 2000 for the Prototype Phase.

AREAS OF INTEREST: Under this BAA, DARPA intends to contract with qualified sources to research and develop theoretical techniques, tools, models, and experiments that explore and

advance the unique applicability of control theory and other promising technologies toward achieving real-time dynamic control of military systems. This project will specifically focus on the control of air operations and is soliciting proposals in two categories. The first Proposal Category is Theoretical Techniques and Tools to develop theoretical techniques and tools in one or more of the following areas of interest: a) Distributed Control, b) Human Embedded Systems, c) Symbolic Control, d) Dynamic Plant & Online System Identification, e) Hostile Counteractions, f) State Estimation, and g) Other (to be proposed by the proposer). The second Proposal Category is Air Operations Enterprise Model to build an enterprise model of the Joint Air Operations domain to enable, conduct, and analyze experiments that will provide insights into possible dynamic phenomena; verify the value or contribution of various control and other techniques and tools that will be developed under the other solicitation category; and identify the qualitative and quantitative characteristics of proposed functional component technologies.

ACQUISITION INFORMATION: As mentioned earlier, the JFACC Project is structured into two distinct phases – a Design Phase (18 months in length) and a Prototype Phase (approximately 24 months in length). These are not mutually exclusive phases, in that products from the Design Phase and earlier phases will be integral parts of the Prototype Phase. To help ensure that the Project has the techniques, tools, and models available for the draft preliminary system design (due the summer of 2000), initial products must be delivered within 10 months of contract award.

In the Theoretical Techniques and Tools Category DARPA intends to award approximately 10-12 contracts for the seven (7) interest areas in this category as listed earlier. Recognizing that there may be some synergistic or holistic value to combining or converging several of the interest areas, Proposers may bid against any combination of the seven interest areas. Also recognizing that some Proposers may have a very unique and focused capability to offer, DARPA encourages bids against single interest areas as well. DARPA intends to pursue multiple approaches to each interest area. In the Category of Air Operations Enterprise Model, DARPA intends to award up to two contracts. The Air Operations Enterprise Model will serve as the heart of the detailed analysis approach for the preliminary system design solutions, so DARPA plans to mitigate risk by offering multiple awards. This also offers the opportunity to pursue two different approaches to the modeling problem. DARPA also envisions that the Air Operations Enterprise Model may

become a key component of the new design, therefore, it may be extended into the Prototype Phase.

Proposers may submit proposals and be awarded contracts in both categories. If a proposer is selected for both categories, DARPA intends to combine the efforts into a single contract with separate tasks.

Contracts awarded under this BAA may be Cost-Plus-Fixed-Fee (CPFF), Grants, or Other Transaction Agreements. Proposers are responsible for selecting the contract mechanism they believe to be most appropriate and explaining the rationale for their choice.

This is an unrestricted solicitation. Proposals submitted shall be in accordance with this announcement. This BAA will remain open from the date of publication until the proposal due date. No portion of the BAA will be set aside for Historical Black Colleges and Universities (HBCU) or Minority Institutions (MI) due to the impracticality of reserving discrete or severable areas of research for exclusive competition among the entities. However, we encourage these entities to respond to this solicitation.

EVALUATION AND AWARD: Proposals will be selected through a technical/scientific/business decision process with technical and scientific considerations being most important. The evaluation criteria are: (A) The innovativeness and payoff of offeror's technical solution; (B) The technical approach selected by the offeror to achieve success; (C) The experience and qualifications of the offeror and the key personnel; (D) The offeror's proposed work plan and schedule, and (E) The cost realism and value of proposal to the government. Criteria E, the realism of the cost proposal, will be evaluated separately, secondary to the Criteria (A-D) listed above. See the PIP for more details.

ORGANIZATIONAL CONFLICT OF INTEREST (OCI): Each proposal shall contain a section satisfying the requirements of the Federal Acquisition Regulation (FAR) Subpart 9.5, Organizational Conflict of Interest. Under the terms of this FAR, all Proposers and proposed subcontractors must affirmatively state whether they are supporting any DARPA technical office(s) through an active contract or subcontract. All affirmations must state which office(s) the proposer supports and identify the prime contract number. Affirmations shall be furnished at the time of proposal submission. All facts relevant to the existence or potential existence of organizational conflicts of interest, as

that term is defined in FAR 9.501, must be disclosed. This disclosure shall include a description of the action the Contractor has taken, or proposes to take, to avoid, neutralize or mitigate such conflict. If the proposer believes that no such conflict exists, then it shall so state in this section.

BRIEFING TO POTENTIAL PROPOSERS: A meeting with potential proposers will be held on April 20, 1999 in Washington D.C. Detailed information about the date, time and location of the meeting and related information will be posted on the Solicitations Page of the DARPA WWW site at URL: http://www.darpa.mil/iso/jfacc .

SUBMISSION: Proposals are due by 12:00 Noon on May 18, 1999. An original and ten (10) copies of the proposal must be submitted to BAA 99-18, DARPA/ISO, ATTN: Col. Daniel McCorry, 3701 North Fairfax Drive, Arlington, VA 22203-1714. PROPOSALS SENT BY FAX OR E-MAIL WILL BE DISREGARDED. Proposers MUST obtain the BAA 99-18 Proposer's Information Package (PIP) which provides further information on the JFACC Project, areas of interest, evaluation, preparation and formats of full proposals. The PIP will be posted to the DARPA website no later than April 2, 1999.

COMMUNICATING WITH DARPA: DARPA intends to use electronic mail and the WWW for most communication regarding this BAA. All technical and administrative correspondence and questions concerning this BAA must be directed via electronic mail to baa99-18@darpa.mil. Include the originator's full name and return email address in the text. These questions will be answered via the Frequently Asked Questions file (FAQ). The PIP, FAQ and other reference documents are available at URL http://www.darpa.mil/iso/jfacc . (0323)

SPONSOR: Defense Advanced Research Projects Agency (DARPA), Contracts Management Directorate (CMD), 3701 N. Fairfax Dr., Arlington, VA 22203-1714. (0121)